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Docket: 98037

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11-2-01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Stefan J. HALBLÄNDER — Group Art Unit: 2164

Serial No.: 09/043,574 — Examiner: Hani Kazimi

Filed: March 26, 1998 — Final Office Action: February 27, 2001

Notice of Appeal: August 27, 2001

For: METHOD FOR THE SITUATION-DEPENDENT ARRANGEMENT AND/OR ACTIVATION OF RESOURCES

5D56

APPLICANT'S APPEAL BRIEF

Honorable Commissioner of
Patents and Trademarks
Washington, DC 20231

Sir:

Applicant hereby submits this Appeal Brief, in triplicate, in support of the Notice of Appeal filed on August 27, 2001. The fee for filing this brief is also submitted herewith; any deficiencies in the fee may be charged to Deposit Account No. 04-0753.

I. Real Party in Interest

The real party in interest is Stefan J. Halblander as shown by the assignment document recorded at Patent Reel 009949 Frame 0263.

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II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of the Claims

Claims 21 and 32-42 are pending in the above application. These claims were rejected in a final Office Action dated February 27, 2001. The rejection of these claims was confirmed in an advisory action dated August 20, 2001. The rejection of claims 21 and 32-42 is being appealed. Claims 1-20 and 22-31 have been canceled.

IV. Status of Amendments

No amendments were filed after the final Office Action of February 27, 2001.

V. Summary of the Invention

The invention is directed to a method for selecting and deploying resources in an optimal manner in order to accomplish one or more tasks (page 1, lines 5-6). The system could be used, for example, in a manufacturing facility, where a number of machines and people (resources) (page 3, lines 1-2) are available and where there are a number of work orders (tasks) that need to be accomplished. The goal of the invention is to determine how to use the resources to accomplish the tasks in an optimal manner, which optimal

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manner may require that the tasks be completed in the shortest period of time or for the lowest total cost, for example (page 7, lines 5-13).

In the prior art, it was know to use scheduling programs that would calculate an entire day's schedule and determine which resource would perform which task at each moment of the day (page 1, lines 8-14). Because the number of calculations required for such scheduling is very large, it is not possible to perform the calculations in real time (page 1, lines 18-20) and it was often necessary to calculate a schedule hours before the tasks were to be performed. This arrangement was satisfactory as long as no problems arose while the scheduled events were occurring. However, if an employee resource was sick or if a machine resource broke down, the entire schedule would be thrown off. Because hours would be required to recalculate a schedule taking the changed circumstances into account, various shortcuts were used. However, these approaches were less than perfect and did not produce the same allocation of resources that would have been produced if several hours had been taken to re-run the scheduling program using the new fact situation.

The present invention avoids the time-consuming step of calculating full schedules for the allocation of resources. Instead, on an ongoing basis, the system looks at the resources that are available (or that can be taken off a lower

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priority job), and the tasks to be performed, and assigns those resources on the fly, in real time (page 2, lines 20-29). Thus, while the prior art systems had to adapt as best they could when a preestablished schedule was altered, the claimed system continuously works with the facts as they exist at a given moment and assigns resources accordingly (page 3, lines 6-10). It is this ongoing optimization process that sets the invention apart from the prior art.

VI. Issue

Whether claims 21 and 32-42 are anticipated by U.S. 5,369,570 (hereinafter "Parad").

VII. Grouping of Claims

The claims stand or fall together.

VIII. Argument

Claim 21 stands rejected under 35 U.S.C. 102(b) as being anticipated by Parad. Both Parad and the claimed invention are directed to systems that deploy resources on an ongoing basis. When an error occurs or a situation changes, both systems take the change into account and continue carrying out jobs. However, the claimed system is an improvement over Parad because, in responding to events, it determines the optimum deployment of resources while Parad deploys resources

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in a manner that should be acceptable but will not necessarily be optimal.

Parad starts with a schedule. Beneficially, the Parad system is said to generate a schedule in under an hour using a PC type processor rather than in 6 hours on a mainframe type processor as was previously necessary (Parad, column 4, first full paragraph). Thus, Parad's initial schedule should be the optimal schedule for performing a given set of jobs assuming everything goes as planned and no problems arise. However, Parad does not recalculate an optimized schedule in response to error conditions. This would require nearly an hour of processing time. Parad instead responds to changing conditions as best it can, but cannot do so in an optimized way.

The present applicant has found a way to respond to changing conditions in an optimized way. Because the claimed invention does not rely upon a predetermined schedule, there is no need to recalculate a schedule each time conditions change. Rather, the claimed system continuously evaluates the resources that are available, the jobs that are to be performed and criteria associated with each job, and assigns resources in an optimal manner.

Claim 21 requires a process comprising an ongoing optimization-simulation for simulating an optimal deployment of resources. Parad does not show or suggest a system that

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performs an ongoing optimization simulation. Instead, as discussed above, Parad only optimizes the use of resources once, and this takes nearly an hour. Thereafter, the Parad system deploys resources on a basis that is not necessarily optimal. This difference is further discussed in the International Preliminary Examination Report wherein the international examiner found the disclosed invention as then claimed to be allowable over the Parad reference. For these reasons, it is submitted that claim 21 is allowable over Parad.

Claim 32 stands rejected under 35 U.S.C. 102(b) as being anticipated by Parad. Claim 32 requires that, on an ongoing basis, resources be selected and activated based on given criteria and based on the resource properties and resource statuses to accomplish all of said plurality of jobs in an optimal manner. The system of Parad does not select and activate resources on an ongoing basis in order to accomplish a plurality of jobs in an optimal manner. Instead, Parad calculates an optimal use of resources one time, and, if conditions change, does not recalculate optimal deployments. For these reasons, claim 32 is also believed to be allowable over the prior art.

Claim 33 also requires that an optimal job sequence for each resource be determined on an ongoing basis, taking into account all pending jobs and job priorities and job criteria

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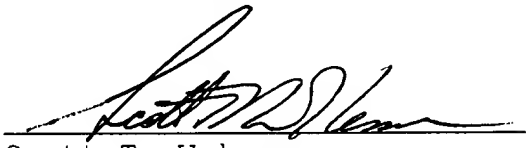
and resources. Parad does not show this ongoing optimization simulation and therefore does not anticipate claim 33.

Claims 34-42 depend from claim 21 and are therefore allowable for the same reasons as claim 21.

IX. Conclusion

In view of the above arguments, it is respectfully submitted that claims 21 and 32-42 are allowable over Parad. It is therefore respectfully requested that the rejection of these claims under 35 U.S.C. 102(b) be reversed and that the claims be allowed.

Respectfully submitted,
Dennison, Scheiner,
Schultz & Wakeman

By: 

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X. Appendix

21. A process for the situation-related deployment or activation of a set of resources for completing a plurality of jobs comprising an ongoing optimization-simulation for simulating an optimal deployment of said resources comprising the steps of:

upon the occurrence of an event, checking said set of resources to identify a subset of said set of resources that is relevant to said event and determining the suitability and availability of each resource in said subset;

on an ongoing basis, taking into account each of said plurality of jobs, a priority assigned to each of said plurality of jobs, a criterion associated with each of said plurality of jobs and the availability of each resource in said subset, first determining the optimal job sequence for each resource, and subsequently either:

selecting and deploying an available resource from said subset of resources for the best possible job at the time of the availability of said selected resource, or,

selecting and redeploying a resource previously deployed on a different job on a job of higher priority.

32. A method for activating resources for carrying out a plurality of jobs comprising the steps of:

providing a database of resources, resource properties,

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and resource statuses;

providing an electronic description of the plurality of jobs including a priority for each job;

providing at least one criterion to be satisfied in connection with the performance of each of the plurality of jobs;

on an ongoing basis selecting and activating resources based on said criteria and on said resource properties and resource statuses to accomplish all of said plurality of jobs in an optimal manner; and,

updating the status of said resources.

33. A method for situation-related deployment or activation of resources comprising the steps of:

providing a database of resources, resource properties, and resource statuses;

providing an electronic description of jobs to be performed including a priority for each job and at least one criterion for executing each job;

conducting an ongoing optimization simulation comprising the steps of:

at the occurrence of an event, determining a subset of resources relevant to said event and determining the status of each of the resources in said subset;

on an ongoing basis, taking into account all pending

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jobs and job priorities and job criteria and resources, determining the optimal job sequence at each point in time for each resource and either:

a) deploying and activating an available resource for the optimal use of the available resource, or

b) determining that an already deployed given resource is not deployed optimally and redeploying said already deployed given resource for the optimal use of said given resource.

34. The process of claim 21 wherein, after the occurrence of an event, a master data record is checked to determine the relevance to said event of each of said set of resources.

35. The process of claim 21 wherein each of said resources generates a status message when queried by a central controller.

36. The process of claim 21 wherein each of said resources sends a status message to a central controller when the status of said resource changes.

37. The process of claim 21 including the step of continuously monitoring the priority of each of said plurality of jobs and the status of each of the resources in said set of

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resources.

38. The process of claim 21 wherein conditional data is supplied to a given one of said plurality resources to activate said given one of said resources and wherein said given one of said resources can be deactivated by withdrawing said conditional data.

39. The process of claim 21 wherein jobs being performed by a given resource can be canceled.

40. The process of claim 21 wherein said plurality of resources are grouped according to job-related properties.

41. The process of claim 40 wherein each of said resources may be included in both a primary and secondary group.

42. The process of claim 21 wherein said criterion is selected from the group consisting of cost, speed and quality.

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